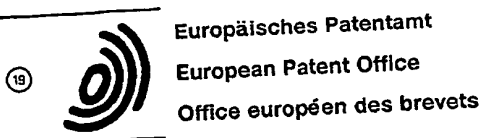


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(54) **Champagne bottle opener.**

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Description

This invention relates to the improvement of a lever operated champagne bottle opener for use with a bottle having a neck and an annular ridge on said neck, which bottle opener comprises a platform for engaging the upper and lower edges of the flanged neck of a champagne bottle, a flanged yoke-shaped cork extractor and retainer having vertically spaced upper and lower flanges engageable to the external top and bottom flanges of the cork, said extractor and retainer and said platform having interengaging guide means for maintaining said extractor and retainer in a horizontal plane while moving vertically in relation to said platform, and lever actuating means pivotally connected to said extractor and retainer and said platform for moving said extractor and retainer vertically in relation to said platform.

US-Patent 4 590 821 discloses a lever operated bottle opener of this type, which comprises a two-handle drive mechanism, a clasp with a pair of resilient wings, which clasp fits under the neck of a bottle to establish a thrust relationship between the frame and the chime and to mount the remover on the bottle, a shelf straddling the bottle neck above the chime, and cork lifter means, which are carried on sliding plates operated by the two handles. This type of bottle opener has a number of considerable drawbacks the main important ones being:

The resilient wings of the clasp do not represent a further support for the bottle; it is necessary to hold the bottle firmly when pushing it into the clasp by stretching the wings so that it is not easy to apply the bottle opener before the mechanism will be operated for lifting and removing the cork.

Moreover, the resilient wings of the clasp are in contact with and engage the neck of the bottle at a position underneath the ridge so that it will be difficult, if not impossible to use this opener for bottles of different neck shape. The bottle opener according to this citation only can be operated if both hands of the user hold and press the two handles so that no hand is free for holding the bottle; moreover, the user has to pay attention that both handles are operated with about the same force so that his attention is concentrated on pressing the handles downwards without having contact with the bottle. Finally, the two opposite handles for opening the bottle are to be pressed downwards from a substantially horizontal to a substantially vertical position and the force to be exerted by the user is to be applied with both hands in front of the user by rotating the two handles towards each other and in a manner, which requires rather high power.

A cork lifter according to US-Patent 4 387 609

comprises an elongated member with a handle section at one end and a lifting section at the other end, which lifting section is provided with a fork the tines of which fit into the groove between the cork and the bottle about the neck band of the bottle. A wire hoop extending from the handle is looped around the top of the bottle below the cork and is springably retracted towards the handle. The hoop is vertically pivotable at the handle and is bent by about 90° at approximately midway out from the handle. The bend forms a fulcrum point which rests against the side of the bottle so that the handle can be rotated down about the fulcrum point causing the fork to rotate up and lift the cork. Because the means for lifting the cork is a wire hoop with a close loop the handling of the bottle opener is not very easy and it is a somewhat fiddling job for the non-expert to apply the loop and the fork correctly at the bottle and the cork, and to make sure that the loop has the right position relative to the handle. The fact that the two wires of the loop are moveably connected to a pair of side slots of the handle's side walls easily can result in a blockage of the movement, if the opener is not handled correctly, and the fact that the wire can become deformed makes the bottle opener difficult to handle. Altogether, the system of the wire loop slidably arranged within the handle, the provision of the spring counteracting the movement of the one end of the loop, and the engagement of the loop with the bottle neck well below the bead of the bottle with a very limited area of contact makes the opener difficult and unsafe to manipulate.

The device according to WO 87/00824 for controllably removing a stopper from a bottle comprises a brace having a vertical opening, which is moved downward over the cork and onto the neck of the bottle, and a chuck is also moved downward onto the cork or alternatively a socket is moved laterally over the cork after the brace has been moved downwardly onto the neck of the bottle. This opener does not incorporate any guide mechanism for maintaining the chuck or socket in any positional relationship with the brace. The brace is to be moved downward over the bottle neck, and the design requires a vertical post on the brace for attachment to the lever. The three step lever action of this opener is rather complicated in structure and in operation.

The Applicant's own US-Patent 3 800 345 discloses a champagne cork extractor comprising a wire cutter and a cork remover, which are operated by gripping the bottle neck and a wire cutter handle in one hand and turning a cork extractor crank with the other hand. However, this type of bottle opener requires about seven turns of the crank to complete the extraction and in addition requires a substantial number of parts, including the threaded

extractor screw, which made the product relatively expensive and the operation rather complicated, the more, because one hand is needed for the wire cutter handle and the other one for turning the cork extractor crank.

It is an object of this invention to provide a champagne bottle opener that is safer, easier and quicker to operate and less expensive to manufacture than any known types of champagne cork removers. Another object is to provide a safe, easy and quicker means to extract corks and stoppers from pressurised containers and which, moreover, is light in weight, relatively simple in construction, and sturdy against easy derangement over long periods of use.

These objects are solved by a lever operated champagne bottle opener with the features of the introductory part of claim 1, which bottle opener is characterized in that the platform is of U-shaped cross-section, the lever actuating means comprises a single lever, one end of which is pivotably connected to said extractor and retainer and is provided with a link which is pivotably connected to said lever at a distance from its pivoted end and a pivot at platform, and the guide means consists of a guide bar connected to the platform and a slipper guide connected to the extractor and retainer and guided by the guide bar.

Another embodiment of a lever operated champagne bottle opener is characterised in that a square guide column is secured to the platform and a semi-flattened buttress arm is extending downward of said square column, a square shaped slipper guide is secured to the rear of the cork extractor for slidably engaging the cork extractor to the square column, a pair of brackets are secured to said square slipper guide and support the roller bearing and the handle rotatively, a channel bar-shaped fulcrum link is rotatively connected to the handle, and the lower end of the link is rotatively connected to brackets, which are secured to the platform.

The champagne bottle opener according to this invention incorporates a number of features, which cannot be derived from the above-mentioned references nor from any other state of the art known to the Applicant. The opener comprises only four parts and in addition some fasteners. At the same time the opener is easy to store, easy to mount and dismount, and easy to operate and requires only a single lever action to produce the cork extraction. Applicant's device includes a platform, which engages the annular ridge on the neck of the bottle, a cork extractor, which engages the cork, and a lever and link coupled to the extractor and platform, respectively. A bar carried on the platform

and a slipper guide carried on the extractor provide an interengaging guide means for maintaining the extractor in a horizontal plane while moving vertically in relation to the platform. In use, Applicant's bottle opener is slid horizontally to simultaneously position the platform on the neck flange of the bottle and position the extractor on the cork. Then a single downward motion of the lever with one hand of the operator produces the desired vertical lift of the cork from the mouth of the bottle, while retaining the cork in the opener. This extremely simple maneuver comprising the horizontal slide to position the opener on the bottle and the downward lever motion to extract the cork is not achievable with any of the prior art devices nor is it obvious from a combination thereof.

Description of the drawings:

FIG. 1 is a side elevational view of the present invention, illustrating its engagement to a champagne bottle neck, the partially extracted cork, and the levered actuating means.

FIG. 2 is a front elevational view of the device or as it appears when viewed from the right of FIG. 1.

FIG. 3 is a rear elevational view of the device or as it appears when viewed from the left of FIG. 1.

FIG. 4 is a plan view of the device.

FIG. 5 is a side elevational view of a modification to the foregoing champagne bottle opener, illustrating the device engaged to a fully inserted cork, the bottle neck, and the levered actuating means.

FIG. 6 is a rear elevational view of the modified device or as it appears when viewed from the left of FIG. 5.

FIG. 7 is a plan view of the modified device.

Description of Exemplary Embodiments of the Invention

Referring to FIGS. 1, 2 and 3 of the drawings, the flanged yoke-shaped platform 1 is shown engaged to the flanged bottle neck 2. The platform 1 is constructed from a channel bar shaped material (See FIG. 2) the upper flange 3 of the platform 1 provides the foundation which opposes the thrust generated by the levered actuating means, the latter will be described later. The lower flange 4 of the platform 1 functions as an additional resistance to the tendency of the platform 1 prongs to spread apart in view of the seating of flange 4 on the flared bottle neck 2. Referring now to FIGS. 1, 2 and more particularly to FIG. 3, a guide bar 5 is secured to the rear of platform 1, the purpose of this

guide bar is to maintain a horizontal alignment between the platform 1 and the flanged yoke-shaped cork extractor 6, thereby preventing the said cork extractor and platform to tumble and become misaligned when not engaged to the cork and bottle neck.

The cork extractor 6 is similar in configuration to the platform 1. A slipper guide 7 is secured to the rear of the cork extractor 6, thereby permitting the cork extractor 6 to be slidably engaged to the platform guide bar 5. A round headed rivet 8 is secured to the upper end of the platform guide bar 5 to prevent disengagement of the cork extractor 6 from the platform bar 5, as best seen in FIGS. 2 and 4 the upper flange 9 of the cork extractor 6 serves three functions, first as a retainer to prevent the cork 10 from escaping while being extracted from the bottle thus preventing injury and or possible loss of an eye to the operator or other people in the near proximity, second the operator may fully reinsert the cork 10 in the bottle and safely retain the cork to prevent further escape of the carbon dioxide gas, thereby maintaining the effervescent quality of the unconsumed champagne for extended periods of time, and third the upper flange serves as an additional resistance to prevent the prongs of the cork extractor 6 from being forced apart as the cork is being extracted. The lower flange 11 of the cork extractor 6 is provided with serrations (not shown) on the upper face of the flange 11 to prevent the cork extractor 6 from slipping off from the cork 10 as the lifting force is applied. The flange 11 also functions as a resistance to prevent its prongs from being forced apart as the cork 10 is being extracted. In practice it may be necessary to form an upward hook on the flange 11 to prevent the said flange from slipping off from the cork 10 during its extraction from the bottle.

The levered actuating assembly shown in FIGS. 1, 2, 3 and 4, comprises a channel bar shaped handle 12 pivotally mounted to both sides of the cork extractor 6 as by rivets 13. The handle 12 is further pivotally mounted to the fulcrum links 14 as by rivets 15, the opposite ends of the links 14 are pivotally mounted to the platform 1 as by rivets 16. Applying pressure downward on handle 12 will exert a downward thrust on the fulcrum links 14 and the resistable platform 1 and bottle neck 2. The resultant thrust will be directed upward to the cork extractors 6, thence to act upon the less resistable cork 10 and its subsequent extraction from the champagne bottle.

The advantage of the above invention is further amplified in that the three point pivotal action between the handle 12, fulcrum links 14, platform 1 and the cork extractor 6 are interconnected in a novel manner to achieve the following advantages,

the fulcrum links 14 are permitted to move about their respective fulcrum 16 as the distal end of the handle 12 moves downward on its fulcrum 15 while the proximal end of handle 12 moves upward while pivoting about the rivets 13, thereby permitting the cork extractor 6 to move vertically while remaining in a horizontal plane in relation to the platform 1.

The above mentioned levered actuating means has the capability of maintaining the perpendicular axis of the extractor 6 in alignment with the perpendicular axis of the cork and the bottle, thereby preventing the cork 10 from binding in the bottle neck 2 and further to prevent the possible dislodgment of the bottle opener from the cork and bottle neck, further the above described linkage multiplies the force exerted on the cork extractor 6 as the handle 12 moves nearer to the bottle neck, and further the said linkage permits the bottle opener to fold up in a small area for easy stowage in a utility drawer or the like, and still further the above mentioned linkage will permit the complete extraction of the cork 10 in one easy downward thrust of the handle 12.

MODIFICATION TO THE CHAMPAGNE BOTTLE OPENER

Referring to FIGS. 5, 6 and 7 the modified champagne bottle opener comprises certain components having their counterparts in the first embodiment of the invention and are identified by the same reference numerals and only those features requiring a change of parts are identified by new reference numerals commencing with the number 30. A square guide column 30 is secured to the platform 1, extending upwardly and a semi-flattened buttress arm 31 is a downward extension of the square column 30.

The function of the buttress arm 31 is to oppose the thrust generated by the levered actuating assembly from dislodging the platform 1 and cork extractor 6 from their respective engagements to the bottle neck 2 and the cork 10. During the operation of the bottle opener one of the operators hands may encircle the buttress arm 31 and the neck of the bottle to further ensure that the engagement to the cork and bottle neck is maintained, the opposite hand will be free to force the levered handle 35 downward to effect the cork extraction. A square shaped slipper guide 32 is secured to the rear of the cork extractor 6, this configuration permits the cork extractor 6 to become slidably engaged to the square column 30, a pair of brackets 33 (see FIGS. 5 and 7) are secured to the square slipper guide 32. The brackets 33 support the roller bearing 34 and the handle 35 which are rotatively borne on rivet 36, the roller

bearing 34 serves to reduce the friction between the square guide 32 and the square column 30 as the cork extractor 6 is thrust upward. In practice if the friction between the inboard faces of column 30 and guide 32 is excessive, a low friction teflon material may be inserted in the guide 32, or another roller bearing may be substituted in the lower corner. A channel bar-shaped fulcrum link 37 (see FIGS. 5 and 6) is rotatively connected to the channel bar-shaped handle 35 by rivet 38, the lower end of link 37 is rotatively connected to brackets 39 as by rivet 40, the brackets 39 are secured to platform 1.

It will be evident that the above mentioned modification contains another novel cork extracting means by providing a guide column 30 integral with the platform 1 and the slidingly engaged cork extractor 6, as the latter is moved upward it will also maintain a horizontal plane in relation to the perpendicular axis of the cork 10 and the bottle neck 2. The three point configuration of the levered actuating means is identical to the one described in the first embodiment of the invention.

Claims

1. Lever operated champagne bottle opener for use with a bottle having a neck and an annular ridge on said neck, comprising
 - (a) a platform (1) for engaging the upper and lower edges of said ridge of the champagne bottle,
 - (b) a flanged yoke-shaped cork extractor and retainer (6) having vertically spaced upper and lower flanges (9, 11) engageable to the external top and bottom flanges of the cork (10), said extractor and retainer (6) and said platform (1) having interengaging guide means (7, 5) for maintaining said extractor and retainer (6) in a horizontal plane while moving vertically in relation to said platform (1),
 - (c) lever actuating means (12) connected to said extractor and retainer (6) and said platform (1) for moving said extractor and retainer (6) vertically in relation to said platform, **characterised in that**
 - (d) said platform (1) is of U-shaped cross-section,
 - (e) said lever actuating means (12) comprises a single lever, one end of which is pivotably connected to said extractor and retainer (6) and is provided with a link (14), which is pivotably connected to said lever (12) at a distance from its pivoted end and a pivot (16) at platform (1), and

(f) the guide means (7, 5) consists of a guide bar (5) connected to the platform (1) and a slipper guide (7) connected to the extractor and retainer (6) and guided by the guide bar (5).

2. Lever operated champagne bottle opener according to claim 1, characterised in that a square guide column (30) is secured to platform (1) and a semi-flattened buttress arm is extending downward of said square column (30), a square shaped slipper guide (32) is secured to the rear of the cork extractor (6) for slidingly engaging the cork extractor (6) to the square column (30), a pair of brackets (33) are secured to said square slipper guide (32) and support the roller bearing (34) and the handle (35) rotatively a channel bar-shaped fulcrum link (37) is rotatively connected to the handle (35), and the lower end of link (37) is rotatively connected to brackets (39), which are secured to platform (1).

Revendications

1. Tire-boucbon pour bouteille de champagne actionné par levier pour l'utilisation avec une bouteille comportant un col et une partie saillante annulaire sur ce col comprenant
 - (a) une plate-forme (1) pour entrer en prise avec les bords supérieur et inférieur de la partie saillante annulaire précitée de la bouteille de champagne,
 - (b) un extracteur de boucbon en forme d'étrier à rebords et organe de retenue (6) comportant des rebords supérieur et inférieur (9, 11) pouvant entrer en prise avec les bords supérieur et inférieur du boucbon (10), l'extracteur et organe de retenue (6) précité et la plate-forme (1) précitée comportant des moyens de guidage engagés l'un dans l'autre (7,5) pour maintenir horizontalement l'extracteur et organe de retenue (6) précité tandis qu'il se déplace verticalement relativement à la plate-forme (6) précitée,
 - (c) un moyen d'actionnement à levier (12) associé à l'extracteur et organe de retenue (6) précité et à la plate-forme (1) précitée pour déplacer verticalement relativement à la plate-forme précitée l'extracteur et organe de retenue (6) précité caractérisé en ce que
 - (d) la plate-forme (1) précitée a une section transversale en U,
 - (e) le moyen d'actionnement à levier (12) comprend un levier unique dont l'une des extrémi-

tés est articulée sur l'extracteur et organ de retenue (6) précité et est muni d'un organe de liaison à articulations (14) qui est articulé sur le levier précité (12) à une certaine distance de son extrémité à articulation et est articulé en (16) sur la plate-forme (1), et
 (f) les moyens de guidage (7,5) consistent en une barre de guidage (5) assemblée à la plate-forme (1) et un guidage coulissant (7) lié à l'extracteur et organe de retenue (6) et guidé par la barre de guidage (5).

2. Tire-bouchon pour bouteille de champagne actionné par un levier selon la revendication 1 caractérisé en ce que
 une colonne de guidage carrée (30) est fixée à la plate-forme (1) et un bras d'étagage semi-aplati s'étend vers le bas de la colonne carrée (30) précitée,
 un guidage coulissant (32) de forme carrée est fixé à l'arrière de l'extracteur de bouchon (6) pour permettre le coulisement de l'extracteur de bouchon (6) sur la colonne carrée (30),
 deux consoles (33) sont fixées au guidage coulissant carré (32) précité et supportent le roulement à rouleaux (34) et la poignée (35) de manière à pouvoir tourner,
 un organe de liaison à articulations à barre en U (37) est articulé sur la poignée (35) et l'extrémité inférieure de l'organe de liaison à articulations (37) est articulée sur les consoles 39 qui sont fixées sur la plate-forme (1).

Ansprüche

1. Hebelbetätigter Flaschenöffner für Champagnerflaschen zur Anwendung an einer Flasche, die einen Hals und einen ringförmigen Wulst an diesem Hals hat, mit
 a) einer Plattform (1) für den Eingriff mit den oberen und unteren Rändern des Wulstes der Champagnerflasche,
 b) einer angeflanschten, gabelförmigen Korkauszieh- und -haltevorrichtung (6) mit vertikal versetzten oberen und unteren Flanschen (9, 11), die mit den äußeren Deck- und Bodenflanschen des Korkens (10) in Eingriff bringbar sind, wobei die Auszieh- und Haltevorrichtung (6) und die Plattform (1) miteinander in Eingriff kommende Führungsvorrichtungen (7, 5) aufweisen, mit denen die Auszieh- und Haltevorrichtung (6) in einer horizontalen Ebene gehalten wird, während sie vertikal in bezug auf die Plattform (1) bewegt wird,
 c) eine Hebelbetätigungsvorrichtung (12), die mit der Auszieh- und Haltevorrichtung

(6) und der Plattform (1) verbunden ist, um die Auszieh- und Haltevorrichtung (6) vertikal in bezug auf die Plattform zu verschieben, **dadurch gekennzeichnet, daß**

d) die Plattform (1) einen U-förmigen Querschnitt hat,

e) die Hebelbetätigungsvorrichtung (12) einen einzigen Hebel aufweist, dessen eines Ende schwenkbar mit der Auszieh- und Haltevorrichtung (6) verbunden und mit einer Gelenkverbindung (14) versehen ist, die schwenkbar mit dem Hebel (12) in einem Abstand vom Schwenkende sowie einer Schwenkstelle (16) an der Plattform (1) verbunden ist, und

f) die Führungsvorrichtung (7, 5) aus einer mit der Plattform (1) verbundenen Führungsschiene (5) und einer mit der Auszieh- und Haltevorrichtung (6) und von der Führungsschiene (5) geführten Gleitführung (7) besteht.

2. Hebelbetätigter Flaschenöffner für Champagnerflaschen nach Anspruch 1, dadurch gekennzeichnet, daß
 eine Führungssäule (30) mit quadratischem Querschnitt mit der Plattform (1) befestigt ist, und ein halb abgeflachter Strebenarm (31) sich nach unten in bezug auf die quadratische Säule (30) erstreckt,
 eine mit quadratischem Querschnitt ausgebildete Gleitführung (32) mit der Rückseite der Korkenausziehvorrichtung (6) für einen gleitenden Eingriff der Korkenausziehvorrichtung (6) mit der quadratischen Säule (30) in Eingriff kommt,
 ein Paar Tragarme (33) mit der Gleitführung (32) mit quadratischem Querschnitt befestigt sind und das Rollenlager (34) sowie den Handgriff (35) drehend abstützen,
 eine Gelenkverbindung (37) in Form einer U-Schiene drehbar mit dem Handgriff (35) befestigt ist, und
 das untere Ende der Gelenkverbindung (37) mit den Tragarmen (39), die mit der Plattform (1) befestigt sind, drehbar verbunden ist.

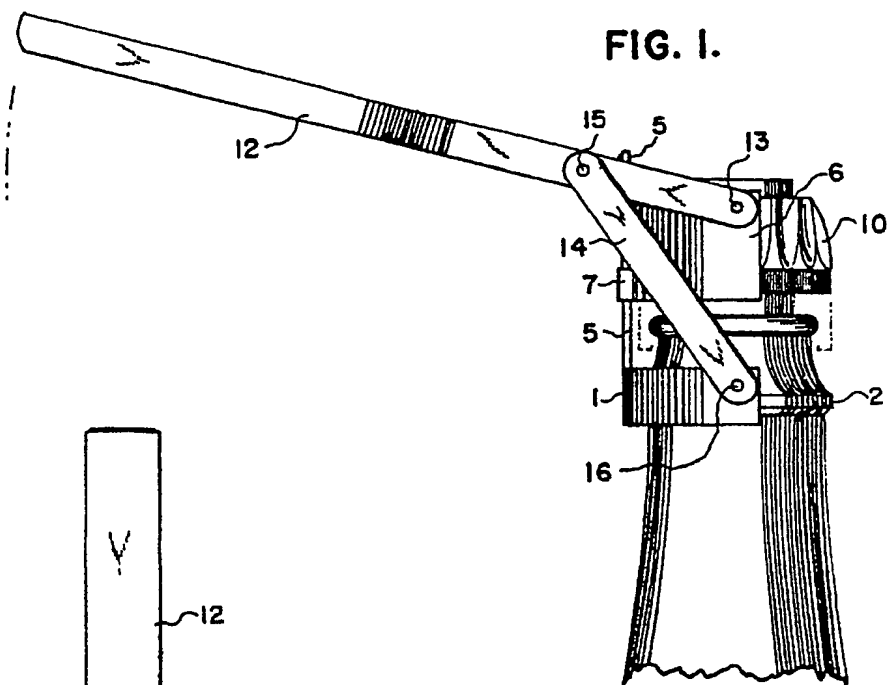


FIG. 2.

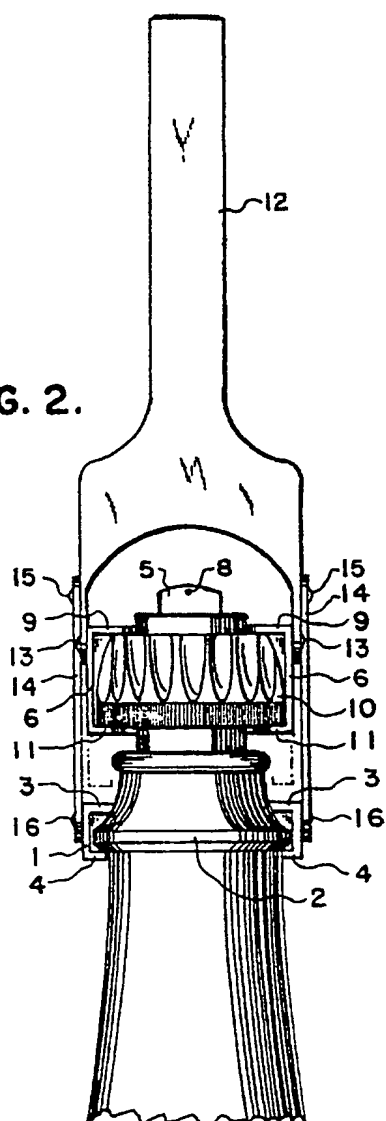


FIG. 3.

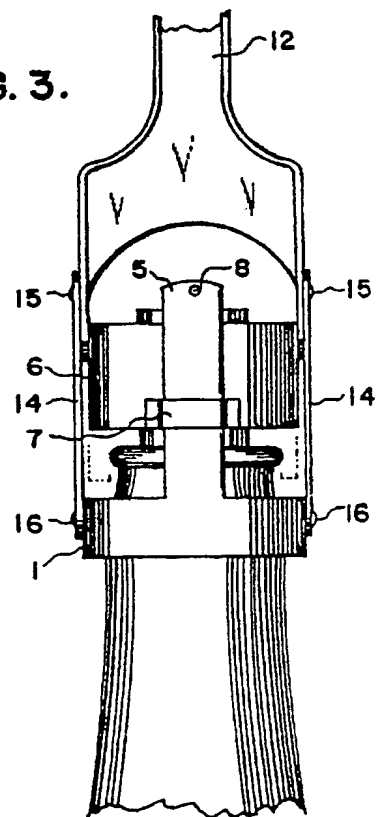


FIG. 4.

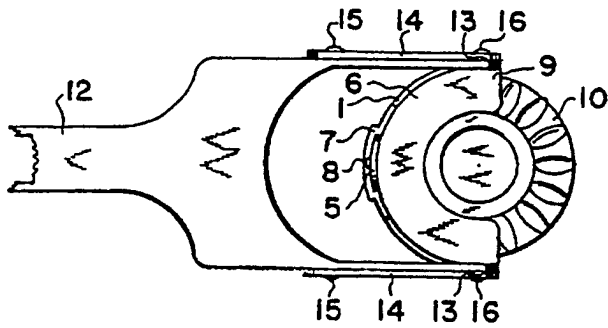


FIG. 6.

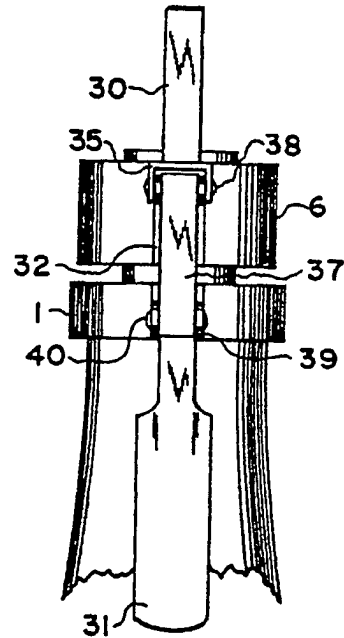


FIG. 7.

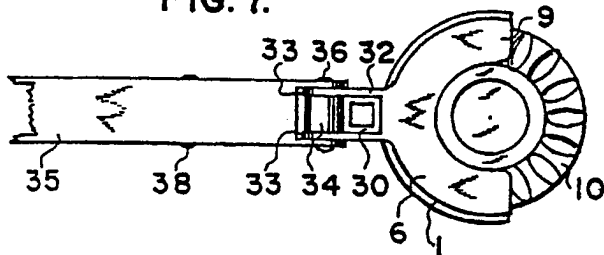


FIG. 5.

